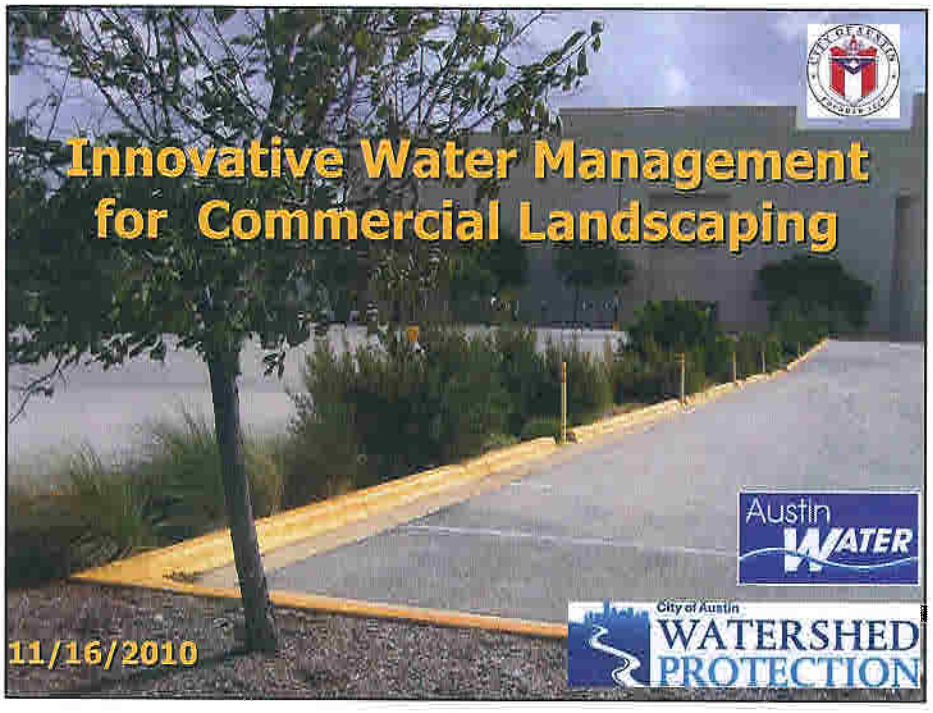

Innovative Water Management
for Commercial Landscaping
Austin WATER
City of Austin
WATERSHED PROTECTION
11/16/2010

Potable Water
Stormwater
"...take a solution and divide it neatly into two problems." Wendell Berry

Current Landscape Designs

- **Irrigation mandated by code**
- **Planting beds higher than pavement**
- **Stormwater shunted off quickly by design**
- **Plants will not likely survive without potable water**

Council Resolution 20091119-064

(November 19, 2009)

- WHEREAS, the City Council passed Resolution 20090806-035...; and
- WHEREAS, the City's Watershed Protection Department has recommended that City Code be amended to require commercial storm water runoff to be directed to landscaped areas while providing flexibility through alternative methods, and provide exceptions for unique site conditions; NOW, THEREFORE
- BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF AUSTIN: The City Council directs the City Manager to initiate necessary code amendments to reflect the recommendations...

Ordinance Goals

- **Use rainwater wisely**
- **Conserve potable water**
- **Help improve water quality**

Stormwater Requirements

- Direct stormwater runoff to at least **50 percent** of required landscaped area
- Can use non-required landscaping as long as area is equivalent to 50% of required area
- Show drainage areas to landscaping on site plan to demonstrate compliance and sufficient drainage
- Stormwater from "hot spot" land uses (e.g., gas stations) and parking lots over the Recharge Zone may not be used unless landscape doubles as a water quality control

Undisturbed Vegetation Credit

- Undisturbed natural areas or undisturbed existing trees can count toward the 50 percent requirement
- No potable water irrigation is allowed in order to receive credit

Supplemental Irrigation

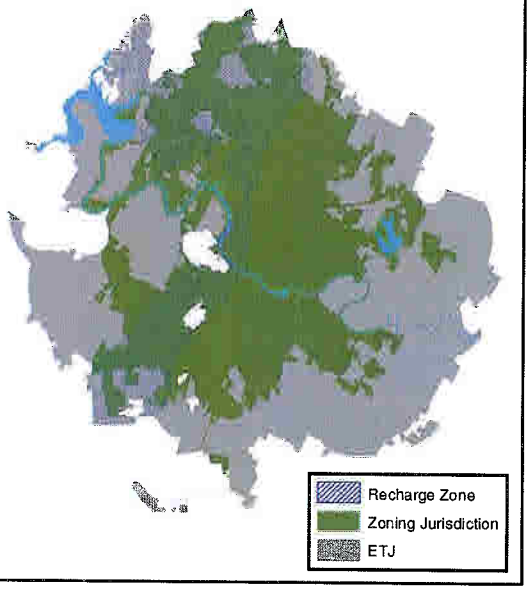
- Permanent irrigation required for new trees and medians/islands/peninsulas
- Permanent irrigation optional for perimeter landscaping
- Temporary irrigation required for two growing seasons if no permanent irrigation is provided

Ordinance Flexibility

- Administrative variance allowed for unique site conditions, such as topography, size, shape, and location of existing features
  - Hot spot land uses
  - Recharge Zone
- Staff will report to City Council two years after adoption about the effectiveness of the ordinance, including recommendations for improvements or amendments

Ordinance Applicability

- City's zoning jurisdiction only
- Development projects requiring a site plan
  - some exceptions e.g., central business district



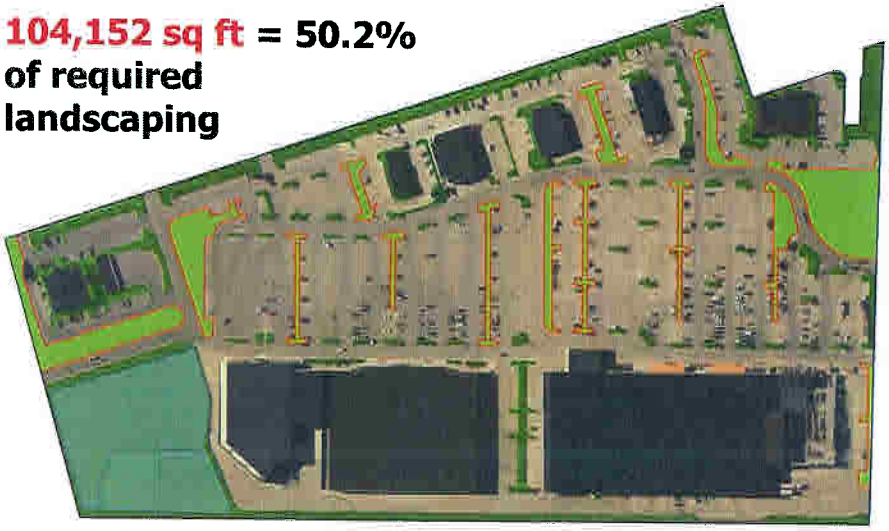
Option 1: Flow Across Landscaping

207,178 sq ft
of required landscaping

Three Points Retail Center Existing (IH-35 and Howard)

Option 1: Flow Across Landscaping

104,152 sq ft = 50.2%
of required landscaping



Three Points Retail Center Potential (IH-35 and Howard)

Option 2: Water Quality Credit

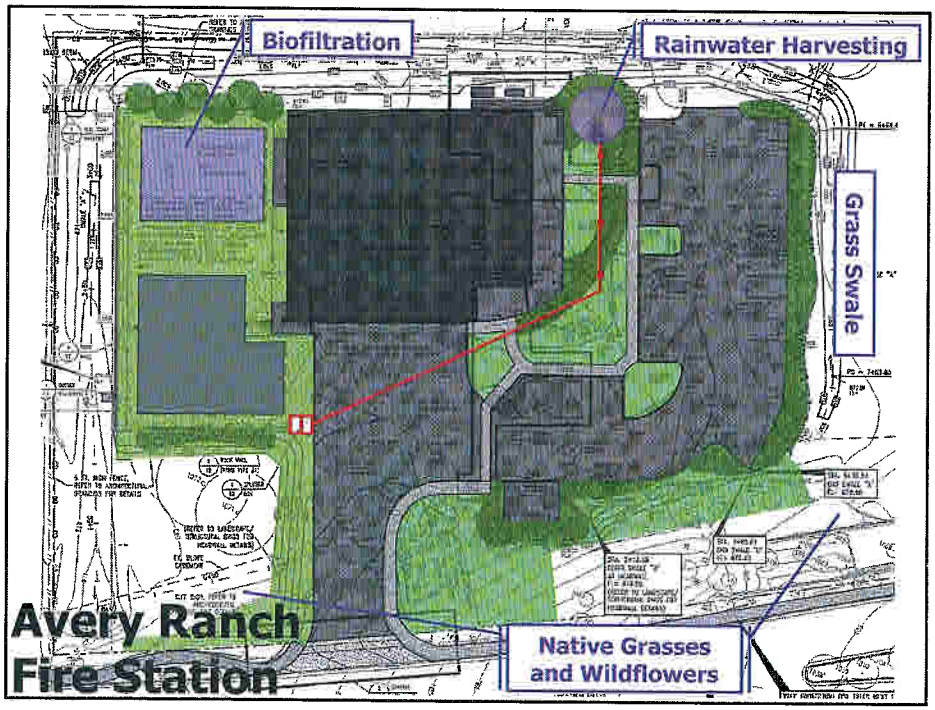
14,046 sq ft of required landscaping

CVS Pharmacy Existing (South First and Slaughter)

Option 2: Water Quality Credit

8,594 sq ft = 63.7% required landscaping

CVS Pharmacy Potential (South First and Slaughter)



Summary

- Conserve potable water and improve water quality by using rainwater wisely and preserving existing vegetation.
- Unique site challenges are addressed with flexible menu of options to achieve compliance.
- Other major US cities have successfully implemented similar requirements.
- Begin a new generation of sustainable sites now.

Schedule

☑ Environmental Board	10/20/10
☑ Planning Commission C&O	11/16/10
☑ Resource Management Comm.	11/16/10
❑ Water & Wastewater Comm.	12/08/10
❑ Planning Commission	12/14/10
❑ City Council	12/16/10

Innovative Water Management for Commercial Landscaping

Austin requires landscaping of commercial areas for aesthetics, buffering, screening, and for urban heat island abatement. Although this landscaping has traditionally relied on potable water irrigation, there are opportunities to use stormwater or other non-potable sources to sustain the health of these landscapes.

Council Resolution 20091119-064
Require commercial storm water runoff to be directed to landscaped areas while providing flexibility through alternative methods and providing exceptions for unique site conditions.

Purpose
Reduce reliance on potable water for irrigation of commercial landscapes. "Commercial" includes any land use requiring a site development permit, such as commercial retail, office, multifamily, industrial, and civic.

Benefits

Community
- Water Conservation
- Enhanced Water Quality
- Urban Heat Island/Climate Protection
- Landscape Health/Survival
- Sustainable Sites/Green Design/Best Practice
- Education and Awareness
- Significant opportunity for future benefits (~ 35% of urban core is "commercial")

Property Owners
- Reduce long-term costs
- Potential water quality credit
- Potential LEED/Green Building credit
- More sustainable landscaping

Challenges Identified and Addressed
- Unique site conditions (steep slopes, existing trees, partial redevelopment, drainage)
- Entrance feature landscapes
- Design sophistication
- Pavement stability
- Up-front costs
- Plant choice impacts
- Supplemental irrigation management
- Recharge zone considerations
- Landscaping tolerance to pollutants

Proposed Ordinance
- Must direct stormwater to at least 50% of required landscaping.
  - Can use non-required landscaping as long as area is equivalent to 50% of required area
  - Multiple options to comply (e.g., overland flow, rainwater harvesting, preservation of undisturbed natural areas/existing trees)
  - Can receive partial or full water quality credit for landscaped areas if designed for purpose
  - Irrigation system (e.g., potable) <u>required</u> for landscaped medians, islands, peninsulas and all newly planted trees
  - Irrigation system (e.g., potable) <u>optional</u> for landscaped borders and perimeters
  - Temporary irrigation required for two growing seasons for areas not permanently irrigated
  - Assess success of ordinance after two (2) years to determine if changes needed
- Exceptions allowed:
  - Unique site conditions (topography, existing development, etc.)
  - Hot-spot land uses (e.g., gas stations, loading docks)
  - Recharge zone (parking lot impervious cover)
- No requirements (including irrigation) for areas where existing, undisturbed vegetation is retained.

Tentative Schedule
- Environmental Board Oct 20, 2010
- Planning Commission C&O Nov 16, 2010
- Resource Mgmt. Commission Nov 16, 2010
- Planning Commission Dec 14, 2010
- Water & Wastewater Comm. Dec 08, 2010
- City Council Dec 16, 2010

RESOLUTION NO. 20091119-064

WHEREAS, the City Council passed Resolution 20090806-035 directing the City Manager to evaluate measures to use landscaped parking lot medians for water conservation and water quality treatment; and

WHEREAS, the City's Watershed Protection Department has recommended that City Code be amended to require commercial storm water runoff to be directed to landscaped areas while providing flexibility through alternative methods, and provide exceptions for unique site conditions; **NOW, THEREFORE,**

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF AUSTIN:

The City Council directs the City Manager to initiate necessary code amendments to reflect the recommendations provided by the Watershed Protection Department in response to City Council Resolution 20090806-035 related to Alternative Water Management methods.

ADOPTED: November 19, 2009 **ATTEST:** Shirley A. Gentry

Shirley A. Gentry
City Clerk

ORDINANCE NO. _____

AN ORDINANCE AMENDING SECTIONS 25-2-1001 AND 25-2-1008 OF THE CITY CODE AMENDING REQUIREMENTS RELATING TO LANDSCAPING IRRIGATION.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF AUSTIN:

PART 1. Section 25-2-1001 *(Procedures)* of the City Code is amended to delete Subsection (B) and redesignate the remaining Subsections accordingly.

PART 2. Section 25-2-1008 (*Irrigation Requirements*) of the City Code is amended to read:

§ 25-2-1008 IRRIGATION REQUIREMENTS.

(A) [~~A landscaped areas, or a plant,~~] An area equal to at least 50% of the total required landscaped area on a project must:

(1) be undisturbed natural area(s) or undisturbed existing trees with no potable irrigation; or

(2) be irrigated by [~~:~~] stormwater runoff conveyed from impervious surfaces on the site using one or more of the following methods:

(a) overland flow;

(b) storm drains;

(c) downspouts;

(d) rainwater harvesting;

(e) retention-irrigation; or

(f) other methods of conveyance as prescribed by rule.

(B) The drainage area used to irrigate under Subsection (A) must be calculated to provide sufficient water for the landscaped area, as prescribed by rule.

(C) Unless the landscaped area under Subsection (A) is being designed as a water quality control under Section 25-8-211, the drainage area used to irrigate the landscaped area:

(1) may not include impervious areas on which the land use or activities may generate highly contaminated runoff, as prescribed by rule; and

(2) may not include impervious areas used for parking or driving of vehicles if located within the Edwards Aquifer Recharge Zone as defined in Section 25-8-2.

(D) No permanent irrigation is required for all or a portion of a required landscaped area that consists of:

(1) undisturbed natural area; or

(2) undisturbed existing trees;

(E) In addition to irrigation meeting the requirements of Subsection (A), supplemental irrigation using irrigation methods described in Subsection (F) is required:

(1) for the first two growing seasons for all or a portion of a newly planted required landscaped area without permanent irrigation;

(2) permanently for all newly planted trees in a required landscape area; and

(3) permanently for all newly planted required landscaping located in medians, islands, or peninsulas.

(F) Irrigation required under subsection (E) may be provided only by one or more of the methods described below:

(1) an automatic irrigation system;

(2) a hose attachment, if:

(a) [~~the site plan area is not larger than 0.5 acre;~~

~~(b)~~]the hose attachment is within 100 feet of the landscaped area or plant; and

(b)[~~(c)~~] there is not a road or parking pavement between the hose attachment and the landscaped area or plan; or

(3) [~~for the first two growing seasons,~~] a temporary, above ground automatic irrigation system, if[~~:~~

~~(a)~~]the system complies with the water conservation requirements in the Environmental Criteria Manual.[~~; and~~

~~(b) the landscaped area is planted with native grasses and wildflowers~~].

(G)[~~(B)~~] An irrigation method must:

(1) provide a moisture level adequate to sustain growth of the plant materials on a permanent basis;

(2) unless fiscal security is provided to the City for the installation of the system, be operational at the time of the final landscape inspection; and

(3) be maintained and kept operational.

(H)[~~(C)~~] A site plan must show:

(1) the drainage area(s) used to irrigate under Subsection (A), including notation of the land uses on impervious areas within the drainage area(s);

(2)[~~(1)~~] the nature and location of an irrigation system; and

(3)[~~(2)~~] that there is no disturbance to the critical root zone of an existing tree.

[~~(D) Irrigation is not required for undisturbed natural areas or undisturbed existing trees.~~

~~(E) An automatic irrigation system must comply with the water conservation requirements of the Environmental Criteria Manual.~~]

(I) The director may grant an administrative variance to the requirements in this Section. An applicant for a variance must demonstrate that:

(1) strict compliance with this Section is infeasible due to unique site conditions including but not limited to topography, size, shape, and location of existing features such as trees or previous development; and

(2) the proposed irrigation plan is the minimal departure from the requirements of this Section .

PART 4. Not later than two years after the effective date of this ordinance, the City Manager will provide a report to City Council regarding the effectiveness of this ordinance, including recommendations regarding improvements or amendments.

PART 5. This ordinance takes effect on _____, 2010.

PASSED AND APPROVED

_____, 2010

§
§
§ _____
Lee Leffingwell
Mayor

APPROVED: _____
Karen Kennard
Acting City Attorney

ATTEST: _____
Shirley A. Gentry
City Clerk

DRAFT